Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Math: \_\_\_\_\_\_\_

**Unit Rates and Percentages Study Guide**

1. There are 25 students in a class and 10 of them are wearing blue shirts.
   1. What percentage of the students are wearing blue shirts?
   2. If 60% of students are wearing a gray shirt, how many students are wearing a gray shirt?
2. Determine how long each trip would take.
   1. Jog 6 miles per hour to a field which is 3 miles away.
   2. Take a train going 60 miles per hour from Washington DC to New York City, which is 120 miles away.
   3. Drive 40 miles per hour from Stevensville to Ocean City, which are 80 miles apart.
3. Izzy’s family is taking a road trip. They are 60% of the way to their destination and have traveled 42 miles. How far is the trip?
4. Kathya reads 6 pages of her book in 7 minutes. *Hint: Write your answers as fractions.*
   1. How many minutes per page is that?
   2. How many pages per minute is that?
   3. If Kathya reads 23 pages at the same rate, how long will it take her?
5. Choose the greater of each pair:
   1. 8.2 kilograms or 13 pounds (Note: 1 pound is about 0.45 kilograms)
   2. 13 yards or 12 meters (Note: 1 yard is about 0.9 meters)
   3. 24,562 ounces or 1,684 pounds (Note: 1 pound = 16 ounces)
6. Mrs. Moore is biking to meet Mr. Moore after work. They are 15 miles apart when they start moving toward each other on the Metropolitan Branch Trail. She bikes at a constant speed of 4 miles per hour, while he bikes faster (he has a faster bike ☺) at a constant speed of 6 miles per hour. How long does it take until Mrs. and Mr. Moore meet on the trail?
7. Metro is conducting research on its trains and wants to know the distance a train travels over certain intervals.

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| --- | --- |
| **time (hours)** | **distance (miles)** |
| 0.5 | 17.5 |
| 1 | 35 |
| 1.5 | 52.5 |

Assuming that the train travels at a constant speed, what is its speed?